



BILLING CODE 3510-DS-P

DEPARTMENT OF COMMERCE

International Trade Administration

University of California, Berkely, et al.

Notice of Decision on Application

for Duty-Free Entry of Scientific Instruments

This is a decision pursuant to Section 6(c) of the Educational, Scientific, and Cultural Materials Importation Act of 1966 (Pub. L. 89-651, as amended by Pub. L. 106-36; 80 Stat. 897; 15 CFR part 301). Related records can be viewed between 8:30 A.M. and 5:00 P.M. in Room 3720, U.S. Department of Commerce, 14th and Constitution Ave, NW, Washington, D.C.

Docket Number: 13-002. Applicant: University of California, Berkeley, Berkeley, CA 94720. Instrument: High Speed Atomic Force Microscope (HSAFM). Manufacturer: Research Institute of Biomolecule Metrology (RIBM), Japan. Intended Use: See notice at 78 FR 7399-7400, February 1, 2013. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as

this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used for a number of experiments including tracking the enzymatic activity of an RNA II polymerase along its template, a DNA gene, while synthesizing the messenger RNA. Having access to higher scan rates in an aqueous environment will provide an unprecedented view of transcription through nucleosomal DNA. By visualizing transcription steps, it is possible to precisely follow in real time the dynamics of events that accompany transcription by RNAP II through the nucleosome including spontaneous DNA unwrapping from the core particle, histone transfer, and histone dissociation under different conditions while determining the main factors that regulate nucleosome stability/instability during transcription. In addition to this capability, the instrument will have the time and spatial resolution to visualize individual tubulin subunits as they arrive at the microtubule end and will complement cryo-EM studies at near nanometer resolution on stabilized intermediates in the assembly process. The unique characteristics of this instrument are the ability to capture images at a rate of up to 15-20 frames per second, reading scan rates as high as 25 frames per second, resonant

frequencies of 3.5 MHz in air and 1.2 MHz in water, spring constants of 0.2 N m^{-1} , a quality factor in water of ~ 2 , and a response time in water of ~ 0.5 microseconds.

Gregory W. Campbell
Director
Subsidies Enforcement Office
Enforcement and Compliance

November 19, 2013
Date

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